1,006,701

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Motor Vehicle Transmission Unit

We, FORD MOTOR COMPANY LIMITED, of 88 Regent Street London W. 1., a British Company incorporated under the laws of Great Britain, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to motor vehicle transmission units which comprise a clutch and synchromesh transmission.

A unit according to this invention comprises a clutch whose input member is arranged to be connected to the engine crankshaft, a synchromesh transmission where mainshaft and layshaft axes are parallel with the clutch axis, and a transfer gear which meshes with a gear on the clutch output member and with a transmission input gear: the transmission mainshaft is supported in a pair of axially spaced journal bearings; and the transmission input gear is located between the mainshaft bearings.

The location of the transmission input gear between the mainshaft bearings enables the total length of the mainshaft to be reduced as compared with similar units in which the input gear is located on the opposite side of a bearing to the other bearing. Preferably the transmission input gear meshes with a gear on the layshaft. Thus the gear on the mainshaft which drives the layshaft is utilized as the transmission input, and this enables the maximum benefit, so far as reduction in length of the mainshaft is concerned, to be obtained from locating the input gear between the mainshaft bearings.

The invention is hereinafter particularly described with reference to the accompanying diagrammatic section through a transmission unit for a front wheel drive vehicle.

[*Price* 4*s*. 6*d*.]

The components of the transmission, which are housed in a one-piece casing, include a conventional friction clutch 3, preferably a diaphragm spring clutch, a gear 5 splined to the clutch member (not shown) journalled in the casing 1, a transfer gear 7 rotatably mounted on the casing 1 and in mesh with the gear 5, and a transmission input gear 9 rotatably mounted on the mainshaft 11 of a conventional synchromesh transmission 13. The transmission 13 includes of course a layshaft, which is not shown in the drawing, and the input gear 9 meshes with a gear on the layshaft.

The mainshaft 11 is supported in the casing 1 by a pair of tapered roller bearings 15 and 17. The transmission includes, in addition to the layshaft, a conventional 3rd and 4th gear striking ring 19, 4th gear dog teeth 21, 3rd gear dog teeth 23, a 1st and 2nd gear striking ring 27, 1st gear dog teeth 29 and 2nd gear dog teeth 31. The 4th gear dog teeth are formed on the same sleeve as the transmission input gear 9; the 3rd gear dog teeth 23 are formed on the same sleeve as a 3rd gear pinion 33 in constant mesh with a pinion on the layshaft; the 2nd gear dog teeth 31 are formed on the same sleeve as a 2nd gear pinion 35 in constant mesh with a pinion on the layshaft; and 1st gear dog teeth 29 are formed on the same sleeve as a 1st gear pinion 37.

A differential drive pinion 39 is formed on the end of the mainshaft 11 immediately adjacent the roller bearing 17. The housing for the differential is constituted by a wall of the casing 1 and a sheet metal cover 39. The casing 1 has an opening at the right hand end of the mainshaft 11, and this opening is closed by a cover 41.

The casing 1 also forms the engine pump.

WHAT WE CLAIM IS:—

1. A transmission unit for a motor vehicle which comprises a clutch whose input member is arranged to be connected to the engine crankshaft, a synchromesh transmission whose mainshaft and layshaft axes are parallel with the clutch axis, and a transfer gear which meshes with a gear on the clutch output member and with a transmission input gear: and in which the transmission mainshaft is supported in a pair of axially spaced journal bearings; and the transmission input gear is located between the mainshaft bearings.

2. A unit according to claim 1 in which the transmission input gear meshes with a gear on the lay shaft.

3. A unit according to claim 1 or claim 2 in which a differential drive pinion is formed on the end of the mainshaft.

4. A unit in which the gear on the clutch output shaft, the transfer gear, the mainshaft and layshaft journal bearings are all located in the same one-piece casing.

5. A unit according to claim 4 in which the casing also forms the engine sump.

6. A motor vehicle transmission unit substantially as hereinbefore particularly described and as shown in the accompanying drawing.

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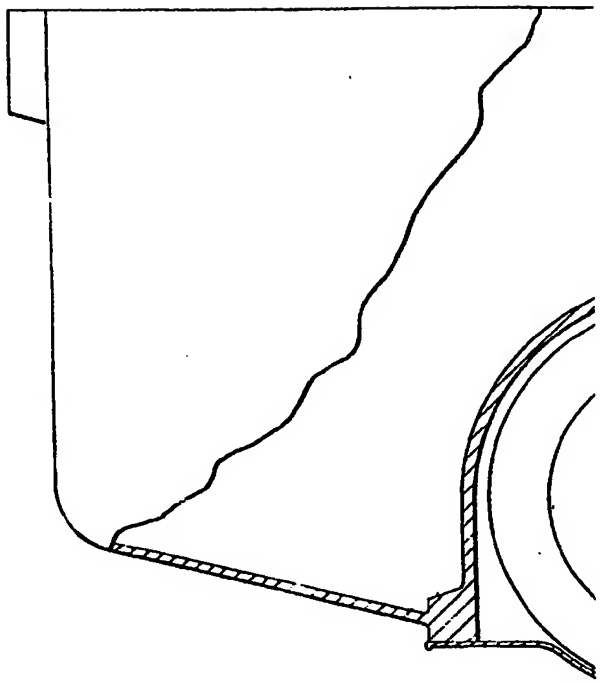

1006701 COMPLETE SPECIFICATION

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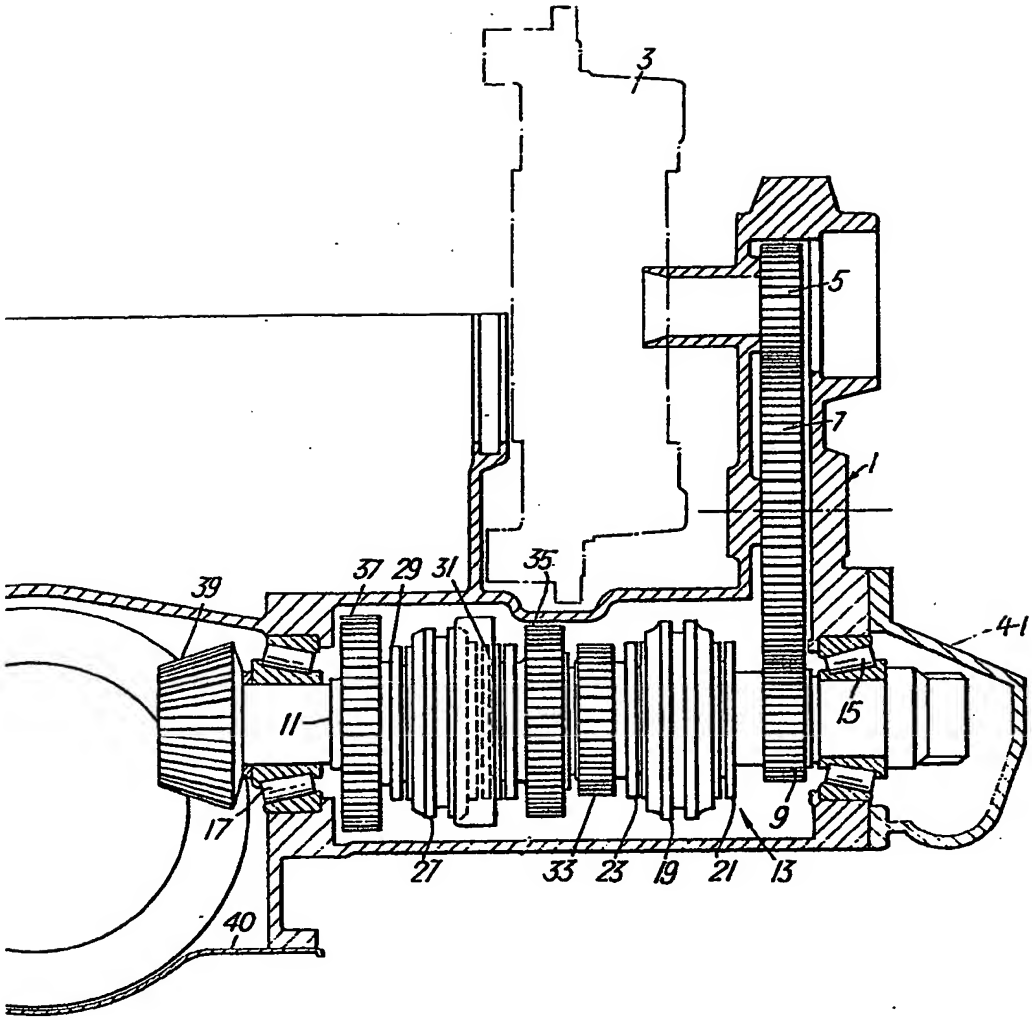

1006701 COMPLETE SPECIFICATION
1 SHEET

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